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PIGS AND PIG PRODUCTION *

BY

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The drop in the animal population of this country as a result of the war is slowly and surely being remedied, and pigs are often linked with poultry as the two species of animals we need to concentrate upon more than ever if the breakfast diet of the British people is to be brought back to pre-war standard. With careful breeding our sows can multiply rapidly, almost twice yearly, the limiting factor being their food. The fact that we have to import so much of our pig food is a serious deterrent to any great expansion of the pig population here, but even with our own resources of home-grown food, there is much that can be done to increase home-produced bacon, and make us less dependent upon Dominion and foreign countries for our pig meat. We must always bear in mind that for every pig killed abroad, only the two cured sides come to this country. The head, shanks, tail, hair, fat and internal organs all remain in the country of origin. Thus if we can displace two imported sides of bacon by the rearing of an extra pig in this country, we gain far more than the price per pig, as all the organs and parts I have mentioned can be processed here in British factories, and so provide work for many hands.

We have never gone in for very large concentrations of pigs on huge pig farms, as is done in some countries, *e.g.*, the United States of America. Even our largest farms have seldom carried more than a thousand head at a time. Our tendency has been to distribute our pig population over the whole country, in comparatively small pig farms, and along with general farming. In pre-war years, Public Health legislation was responsible for almost wiping out the "cottager's pig," but the evil of war brought some good in its train in that it led to a rise in the numbers of "small pig keepers" as they are called, and in pig clubs, thereby bringing the pig back once more to our urban areas.

There appears to be every indication that the urban pig has come to stay, but even with this addition there is still plenty of room for an expansion in the industry. The general farmer wants to come into the picture as much as the specialist pig breeder. There is ample room on many of our farms for an extra sow or two, and this applies to attested herd dairy farms in particular. There is no reason why a few tuberculin-tested sows could not be kept on an attested dairy farm. The percentage of tuberculosis in British pigs is not so great as all that. Some years ago I kept a record of pig-collecting areas in these islands from which one could be certain of receiving repeated consignments of tuberculous pigs. At that time pigs were coming in from all parts of Britain, Northern Ireland, and Eire. What the record showed was that the tuberculous pig areas were largely the dairy cattle centres. In other words, tuberculosis in cows and pigs seemed to go together, and particularly so in the great whey-feeding districts.

Since that time there has been much activity in cleaning up dairy herds, so that a drop in the incidence of pig tuberculosis can be expected; although the avian type of the disease can, and does, cause nearly a third of pig tubercle, it is not so important a factor in the pig as is the bovine infection. Some German authorities have claimed to be able even to distinguish avian tuberculosis in pig lymphatic nodes during the course of meat inspection, and that by macroscopic evidence alone, and there are some British veterinary surgeons who also seem to find it possible to distinguish between bovine and avian tuberculous lesions in pig carcases. It is said that in the latter infection the caseous foci are generally putty-like, pin head in size, and readily enucleated. Many pin-head-sized lesions in the lymph nodes of the pig, especially in the submaxillary nodes, may be caused by pus-forming organisms, and organisms other than the tubercle bacillus, so that macroscopic evidence alone can hardly be convincing. Neither is it possible completely to accept figures for the incidence of tuberculosis in pork pigs, for reasons which I shall mention later.

In pre-war years, when there was no very violent disturbance in the pig population, about 10 to 11 per cent. was a fair average covering the percentage of tuberculosis found in pigs from all over the country, including Ireland, and also having regard to all age-groups. The last war did not affect the pig population numbers to any great extent until about 1941, when the great "killing-off" during 1940 had expended itself; then, with the Eireann pigs out of the running, and with transport and other zoning schemes in operation, the sources of supply were drawn in closer to the factories. No longer were pigs sent on very lengthy journeys by ship, road, or rail. Road transport has since increased tremendously, again shortening the journey from farm to factory. All this has had an effect upon pigs, and the incidence of pig disease encountered in the bacon factories and abattoirs.

Cutting out many dairying districts, the percentage of tuberculosis found in pigs slaughtered at one large factory during the war years dropped from 11 per cent. to about 4 per cent. With the post-war expansion in the industry this percentage has already crept up to 9 per cent. to the end of 1949.

I mention these points because they illustrate the danger of taking figures for the incidence of disease in an animal population which is subjected to abnormal conditions. Methods of examination for disease vary in efficiency, and the picture given by figures collected over a comparatively short period may be altered completely when figures are gathered together over many years. That is one reason why I find that figures I gave many years ago as to the incidence of tuberculosis within the pig's body give a wrong picture to-day. There is no doubt that the disease invades the body through the alimentary canal and becomes first manifest macroscopically in the mesenteric lymph nodes. The submaxillary nodes show the next highest incidence of infection, followed by the lungs and liver, the latter organ being infected slightly oftener than the lungs.

As far as the pigs with which I deal are concerned,

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pneumonia is by far the most important disease, and the one causing most losses in pigs to-day. Looking back over the years, there is a remarkable constancy in the order in which some diseases are found in pigs slaughtered and inspected in the abattoir. These would naturally differ from the order of disease incidence in the live animal on the farm, because many of the pathological conditions found in the abattoir have passed unsuspected during the animal's life. Pneumonia is always at the head of the list, and here I am using the term pneumonia in a wide sense to cover cases of pleurisy and even empyaema. This disease is followed by tuberculosis, and kidney diseases like hydronephrosis and nephritis. Hydronephrotic kidneys are fairly common in pigs, and do not appear to cause much trouble to the animal during life, as the one kidney usually compensates for any damage to the other, although in sows some emaciation and uraemia may follow upon severe damage to the kidneys, involving the almost complete disappearance of normal kidney tissue and its replacement by urine.

So much for the diseases which may be of a more academic than practical interest to the veterinary surgeon whose practice includes the treatment of pig ailments. I have already mentioned the prominent part played by the pneumonic diseases, but with penicillin and sulphamezathine available we are now much more confident in tackling these conditions. Pneumonia in the pig does not always follow the classical text-book description, and there are cases of " lameness " and of " rheumatism " in pigs which merely mask pleurisy or pneumonia. I refer to those cases where pigs appear to move only with great difficulty, as though affected with an acute arthritis in all the limb joints. In some cases the animals will stand up on the hind legs, but are unable to raise themselves on the fore-limbs farther than the knees. In such cases the respiration will point to the source of the trouble, movement of the muscles of the fore-limbs causing so much pain to the animal that it simply gives up the attempt after rising to its knees.

The disease which sometimes accompanies the foregoing, or more often follows later, as one would expect in a weakened system, is swine erysipelas. At one time this disease largely affected young store pigs during the warm months or in the late spring. Here again penicillin plus serum treatment is effective in curing the condition. Of late years there appears to be a change in the distribution of this disease within the pig population.

It is not uncommon to find the condition in adult pigs, such as sows, following on after farrowing. In these cases there is no seasonal incidence, as the disease is found in the winter months as well as during the warm weather of summer. There would seem to be a greater tendency to the erysipelas-arthritis type in these adult pigs. Another after effect of the disease is to leave the animal with an extensive scar on the skin of the flanks or back. Whilst the patients respond to the penicillin-serum treatment, there seems to be a secondary arthritis in one or both hind legs, following on an apparent recovery from the systemic infection.

It is a fact that there are variants of the *Erysipelothrix suis*, but whether the unrestricted use of serum and vaccines by pig breeders is responsible for this remains to be seen. It is certain that the continued use of sera and vaccines by lay people, without any expert diagnosis, is bound to lead to some queer problems for the disease eradicator at some time or other. It has always been a matter of surprise to me that biological products of this kind can be purchased by lay people and used in a comparatively indiscriminate manner in this country.

We have been hearing quite a lot lately about the so-called " oedema of the bowel " in pigs, and some of you may have read the discussion we had about it at the last meeting of the Welsh Branch of the N.V.M.A. The condition has been known for many years, but up to the present there has been a tendency to regard it as a lesion following upon some digestive disturbance. Work on this condition is still going on in the Veterinary Research Laboratory of the Eireann government in Dublin, and from what Mr. Timoney, who is in charge of the work, says, there seems little doubt that we shall have to look upon " oedema of the bowel " not as a lesion, but as a specific disease of pigs.

It is to be hoped that Mr. Timoney's work on this disease will soon be published. On the whole, we are fortunate in that our British breeds of pigs are not subjected to the infections common in countries where large concentrations of pigs are kept on pig ranches. Concentrated feeding, and bringing pigs up to bacon weights too rapidly, have in the past given us much cause for anxiety as far as disease control was concerned. The scarcity of imported feeding-stuff has taught British pig breeders to rely more upon their own efforts, to give the pig a little longer time to reach maturity, and thus to produce a healthier animal.

There can be no doubt that the necrotic enteritis which was common enough in our pig herds before the war was due to environmental and dietetic errors. The same applies to piglet anaemia. The Scandinavian type of pig house is quite useful for fattening stores, but such houses should not be used to rear young stock. It is a mistake to build these big farrowing houses, where the litter is born and reared until weaned. Anaemia and scour are common in such houses, whilst the conditions mentioned give hardly any trouble to piglets allowed to run with the mother at pasture during the day. Artificial sunlight is no substitute for the real thing.

I have mentioned that the " cottager's pig " is with us once more, although the owner is now called " the private pig-keeper " to distinguish him from the commercial pig breeder. In spite of this there is still room for expansion in the industry, as a recent comparison of the pig to human population in this and other countries shows. Whereas Denmark, the U.S.A., and Canada have one pig to every two or three people, we in this country only have one pig to every 20 persons.

As far as the type of pig produced here is concerned, the curers have for years advocated the production of a commercial bacon pig: a pig with a long lean flank, not too heavy in the jowls, a short snout, light in the forequarters and with hams well-muscled down to the hocks. Such a type of pig is being produced by our foreign and dominion competitors, with the result that the bacon entering this country is generally uniform in size and type. It is furthermore of the mild-cured kind which the British market demands, and by the British market I mean the housewife. She is the final arbiter in these matters, and her views are those passed on by the grocer to the wholesaler, and by the wholesaler to the manufacturer. In turn the manufacturer has for some years been endeavouring to get the primary producer, the farmer, to fall into line and breed a suitable pig for this market. Now the average farmer, when he rears a pig for his own table, does not cease to pump food into the animal until it is well over the usual bacon weight for the commercial market. Such a pig is too fat for general use, but the farmer likes plenty of fat on his bacon, and because of his taste, he seems to imagine that the commercial market can also like it. It is difficult to get the producer to realise that two commercial pigs can be fed with the food he uses

to feed one of his " overweights." Nor is any help given by Agricultural Institutes, who seem to have devoted precious little of their time to studying the requirements of the bacon market. Time and time again one hears and reads of advice being given to farmers to breed such-and-such a breed, not because it produces a good lengthy side of bacon, but because it is popularly supposed to be a " good grazing pig." Hence it is that market considerations are generally ignored.

It is over 20 years since I was asked to carry out a survey of the British breeds of pigs, to determine whether these breeds showed uniformity of anatomical structure so far as rib-counts were concerned. It had long been held by some bacon curers that certain breeds gave a longer side of bacon than others, and this rule-of-thumb method had been practised for years in breeding on their own farms. What the rib-count survey showed was that the " long-sided breeds " of pigs could be reduced to three: the Welsh, the Large White, and the Large Black breeds. Whereas the other ten breeds seldom varied from the standard 14 pairs of ribs, the three breeds mentioned often showed an increase, the Welsh breed giving up to 17 pairs of ribs. As this breed is also white in colour, a prolific breeder, and answers closely to the " commercial " specification, it was crossed with that other excellent baconer, the Large White, to produce a commercial pig indistinguishable from the one with which the Danes and others have captured the British bacon market. The Danes used the native Landrace sow with the Large White boar. The Landrace and the Welsh sow are practically indistinguishable. Hence we have in this country the two breeds necessary to produce the commercial pig. Up to now it has been left to the curers to produce this type of pig, whilst the breed societies are still pushing their own particular breed, as being pre-eminent for bacon production.

The Large Black breed is another of these first-class long-sided bacon pigs. Objection has been raised to the black breeds because of the habit of leaving the skin on as " rind," so that the black hair roots tend to show up in the rind, more than the hair roots of white pigs do. As that is so, then there is no reason why this excellent breed should not be used more for the rolled bacon trade, and the skin diverted to the leather trade instead of being wasted as " bacon rind." As far as the other ten breeds are concerned, they are primarily " short-sided," and should be bred largely for pork production, although bacon produced from such pigs is equally good as that produced from the long-sided breeds, except that there is less of it per pig, and that is an important point in a country largely urbanised, and having to import most of its animal feeding material. One frequently hears it said that bacon produced from such-and-such a breed of pig is superior to that produced from any other. Muscular and fatty tissue is the same in all pigs, except for any slight difference due to feeding, *i.e.*, an excess of fish meal or of oily foods in the pigs' ration will certainly affect the taste of the bacon made from those animals. As a rule the quality of the bacon produced depends upon the curing thereof, rather than upon the breed. (I am speaking of quality and not quantity.) One man can turn out a beautifully cured York ham, whereas another only produces an " imitation " York ham, just as sausages produced by one firm may taste differently from those produced by a rival firm; although the main ingredients are all laid down by the Food Ministry, yet each manufacturer has his own recipe containing subtle variations in the spicing of the finished article.

You may therefore safely discount these tales about bacon from the " X " breed being superior to bacon from the " Y " breed. If you are not satisfied with your bacon, it is the curer who is at fault and not the breed of pig.

It is doubtful whether the general public realise the importance of the pig in our economy. There is hardly an industry anywhere in which waste elimination has been carried to such a fine art. Take the outer covering of the pig, the bristles and hairs; dehairing machines scrape these off the carcases. The long bristles running down the spine are collected by hand, the other hair goes through a cleansing process, followed by dying and mixing with the longer cow and horse hair. Ingenious machines spin all this into lengthy hair ropes, whilst heat sterilisation produces a " permanent wave " in the hair, which is then uncoiled and eventually sold in bulk or else as thick, piled, carpet-like rolls with a hessian base. This forms the raw material for the bedding manufacturer, the furniture upholsterer, and the motor body builder. Nearly all of you driving round your practices daily are sitting on this product of the pig!

The back bristles are dealt with by other cleverly produced and thought-out machines which sort the bristles, tip-to-tip, bleach and sterilise them, and having placed them all in bundles according to length, provide raw material for the brush maker, from toothbrush to humble broom head.

Non-edible waste matter is rendered down and used for the manufacture of fertilisers, bone meal, blood meal, and meat and bone meal. The concentration of slaughtering has done a lot to assist in the efficient collection of " medicinal glands," such as thyroids, suprarenals, pituitary bodies, etc. Dried extract from the pig's stomach is used in the treatment of pernicious anaemia, and so is a liver extract. There seems to be no limit to the uses to which pig glands, and offal, can be directed, and numerous subsidiary trades have risen in recent years, giving employment to hundreds of people, all deriving their livelihood from the humble pig.

There is a tendency in certain quarters to relegate veterinary surgeons to a minor role in the animal industry. Whilst the veterinary surgeon is regarded as competent to advise on disease and to treat sick animals, all sorts of people have come to the fore to claim infallibility when dealing with the wider aspect of animal husbandry, nor do these good folk hesitate to invade what they themselves have spoken of as the veterinary surgeon's sphere, disease control. The examination of livestock by people who are without a sound knowledge of comparative anatomy and physiology at the very least can only lead to the eventual deterioration of our breeding stock, whether it be through the examination of stallions, or of bulls, rams or boars. We veterinary surgeons have been far too modest in the past, and it is high time that fuller use was made of a body of people whose basic training is such as to enable them to contribute much to the country's welfare.

Research work still goes on into various aspects of the pig industry. I have mentioned that on " oedema of the bowel " as an example. Another is on " pig influenza," and here the Ministry's officers may be able to render a great service to humanity. There may be a possibility that *Pasteurella suiseptica*, so commonly found in pig pneumonia lesions, and regarded as the casual organism of swine pneumonia, is after all only a secondary invader, and that the swine influenza virus is at the root of the matter. What relationship exists between the swine influenza virus and the common cold virus in man, we do not know, but an enquiry along those lines should yield interesting results.

I have refrained from giving you a paper exclusively on pig diseases, because there are other aspects of the pig industry which interest our profession, and upon which we

are quite as capable of expressing an opinion as are men who have not the good fortune to possess our basic knowledge.

Discussion

Mr. G. Moore, opening the discussion, said: This is a paper a bit out of the ordinary. Its title, as you will have noticed, is "Pigs and Pig Production" and Col. Anthony is to be congratulated on departing from the usual narrow range of papers given all too commonly at our veterinary meetings. All too frequently the papers given at meetings of Divisions deal with narrow aspects of disease problems, but we as veterinary surgeons should not direct our attention to these aspects alone. It is impossible to separate health and disease. Disease, after all, is any departure from the normal in the animal mechanism and it is impossible to deal with the abnormal without being completely familiar with the normal. This is perhaps not a text-book definition of disease, but I hope I have made plain what I mean.

The first thing on which I would like to comment, strangely enough, is bacon. The speaker says that the quality of the bacon produced depends on the curing thereof rather than on the breed of the pig from which it is produced. He also insinuates that feeding has little to do with the quality of the final product. I am not certain that this is altogether right. If it is, it speaks very badly for the bacon curers in this country. In the wholesale markets here in normal times the price of English cured bacon was the second lowest, the only lower one being that of bacon produced in the U.S.A. Canadian prices were usually a little better than English, and Danish and Irish about equal at the top. The reason for this I always thought lay in the feeding of the pigs from which the bacon was produced. In the U.S.A. pigs got an uninterrupted diet of grain and little effort was made to balance the diet. In this country more attempt was made to do this, but it was by the addition of fish and meat meals to the ordinary diet of grain, and, in addition, enormous numbers of swill fed pigs were turned into bacon. In Denmark and Ireland the diet was frequently balanced by the addition of skimmed milk to the feed and I always thought, rightly or wrongly, that the superiority of the bacon produced in these countries was due to this factor almost entirely.

I was also struck by Col. Anthony's remarks about breeding pigs suitable for the bacon trade. I do not know a thing about this point, but I do think that we suffer in these islands from far too many breeds—not only of pigs, but of all livestock. I do not know how many breeds of pigs there are, but I have always thought that we would be much better off if we had only three or four breeds and that if our 22 breeds of sheep (I think it is about 22) were cut to the same number, we would still have sufficient types suitable for our varying conditions. I have thought for many years that people kept certain breeds of pigs in this country because they liked their complexions or "their hair do's" or the shape of their snouts and not for their qualities as baconers or porkers. It is high time that this attitude was reconsidered and I think it is up to the bacon curers to "propagand" for the type of pig they want.

Just a few words about disease problems. First of all, "oedema of the bowel." This has been familiar to me for the past 20 years, but it is definitely on the increase; I have seen more of it in the past 12 months than in the previous five years. I recently saw a case where a cottager lost two lots of pigs in succession with the disease. In this case two recently purchased pigs died and the owner purchased two more from a different source within a week. These died ten days later from the same disease. This suggests it is a contagious disease, but I personally have never come across a case like this before. Years ago I used to think it was due to a vitamin deficiency, but now I am not at all sure that this is right. Timoney thinks it is a contagious disease, but I am afraid I know nothing about it, except that I can recognise the condition with reasonable certainty, both *ante-* and *post-mortem*.

With regard to swine fever, some of you may be aware that we have had no outbreaks of this disease in the country for a couple of years. It seems that the disease must have got wind of the fact that we now have a reliable and efficient vaccine to deal with it and decided to pack up. More likely, however, the disease has died out because we have ceased to import it in pig products from the U.S.A., where, I understand, the disease is still widespread and rampant.

In the case of swine erysipelas, I notice the speaker advocates the use of serum and penicillin in the treatment of the disease. Why, I wonder? I am not criticising this, but merely looking for enlightenment. I have always found that serum of a *reliable brand* and given in adequately large doses was quite effective. Is penicillin cheaper or better, or what?

Just one other point—Col. Anthony speaks of pneumonia and pneumonic disease as being very common in pigs that reach the bacon factory. This rather surprises me, because during the past 20 years I have made upwards of 6,000 *post-mortem* examinations of pigs and I have found that pneumonia, apart from that found in swine fever, is quite uncommon. Strangely enough, I have found pericarditis—not associated with swine erysipelas—to be quite a common cause of death. Perhaps it is that I do not recognise pneumonia when I see it, but if I have any doubts I put a *small* piece of lung in a bucket of water; if it floats I think it is not pneumonia and if it sinks it is.

I thank Col. Anthony for his most interesting paper, upon which I congratulate him.

Mr. J. E. Johnson asked if Mr. Anthony could tell him how to set about distinguishing between the slaughtered carcase of a sow and a gilt, as one was sometimes asked to do by the Ministry of Food? What were considered the best weights for slaughter, and as regards the use of the Welsh pig as a commercial breed, was Mr. Anthony giving an unbiased opinion?

Mr. Noble described cases of oedema of the bowel in his practice, and how material sent to Cambridge resulted in the isolation of a toxin. Anti-histaminic drugs were often beneficial in this condition. He had also found pigs with lameness—arthritis in the stifle joints.

Mr. Townson spoke of cases of cramp with which he had met, with the swollen arthritic joints. He thought that possibly endocarditis rather than pneumonia would be at the root of these conditions.

Mr. Emson enquired whether the pneumonia mentioned by Mr. Anthony as being so prevalent in pigs was sub-clinical. He wondered what was the cause of these hydronephritis cases; he had sometimes found sows developing paralysis in the hind quarters. What was the best cross-bred bacon pig? Personally he liked a good Black and White cross.

Mr. McFarlane had always attributed oedema of the bowel to dietetic disturbance. The cottage pig was often affected; good pigs, being well fed, went down with oedema. He thought a change of diet in such cases was indicated. Did Mr. Anthony agree that many pig diseases we met with were due to bad management, particularly if the pigman did not know much about his job?

Mr. McCrae had always been surprised at the number of pig diseases found in America, and which we did not seem to get here. Why was that? Was there any particular point in using penicillin and serum in swine erysipelas? Would it not be just as useful to use a good serum alone? He thought that both diet and housing played a part in oedema of the bowel. Pneumonia was not a common factor in pigs in his area.

Major Hicks had always ascribed necrotic enteritis to dietetic deficiency. Pneumonia often accompanied swine fever in the pig. He did not favour any reduction in breeds of animals; they were all valuable, and in demand all over the world.

Mr. Barr sought information about a necrotic and scruffy condition which he had encountered in a litter of sucking pigs.

The President, Mr. Smythe, spoke of cases of arthritis in pigs and how many of these cases responded to sodium salicylate. In bowel oedema he always found the stomach full, undigested grass remaining there many days after the pigs had been removed from grass. Regarding the rib-count, were these extra ribs bi-lateral, and had Mr. Anthony encountered the Cornish pig? Sometimes in an abattoir he found the blood allowed to run all over the floor; on other days it would be collected in milk churns. Mr. Anthony had not mentioned blood or its uses. What would be the purpose of this blood collection.

The Reply

Replying to the discussion, Mr. Anthony dealt first with three points which, he said, had been raised by nearly every speaker. In ordinary fattening pigs he found the use of serum alone sufficient in cases of swine erysipelas, but in sows, especially those going down after farrowing, penicillin was injected as well as serum in an endeavour to prevent the arthritic sequelae often seen in such animals. The second point concerned oedema of the bowel. He regarded this condition as dietetic in origin. Generally one found the stomach crammed with indigestible food, apart from the oedema. The discussion that afternoon, and the work being done on this disease in Ireland, made it impossible to be dogmatic about the cause. Everything seemed to point to it being a specific disease of pigs, and they must await publication of the result of recent work. The third point was pneumonia. In the paper reference had been made to the difference between figures relating to the incidence of disease as found in the abattoir, and in practice. All the abattoir cases would not be seen in general practice, as it was amazing what damage a pig's lung could suffer before symptoms were visible in the live animal. Most of the lesions found in the abattoir would be described as sub-clinical.

Mr. Moore had mentioned feeding affecting the quality of bacon. Of course it did. The paper mentioned some factors like fish meal and oily foods tainting the bacon, but Mr. Anthony had in mind two pigs properly fed, but from different breeds. In such cases, if the curing was similar, it would be impossible to tell from the taste of the bacon any difference in the breed. In pre-war years British bacon varied in price, and there was a time when foreign bacon, notably Polish bacon, was arriving in this country, subsidised by the Polish Government, and being sold wholesale at a price below that at which British bacon could be sent out of the factories. The price of pigs at one time dropped to as low as 7s. 6d. a score to the farmer. It was such incidents that led up to the establishment of Pigs and Bacon Boards. Swill-fed pigs tended to produce oily bacon, unless the swill was carefully handled in the feeding. Milk was certainly an excellent addition to the pig's ration, so long as it was from a non-tuberculous source. Even in a good ration, the addition of milk added that extra something which made all the difference to the pig, and helped to keep it free from those dietetic diseases. The cut in the war-time pig population meant the abolition of overcrowding on pig farms, and assisted in the reduction of swine fever and other diseases. Also, farmers were more inclined to rear their own breeding stock, instead of purchasing stores from open markets. Pericarditis in pigs was often an extension from a resolved case of pleurisy or pneumonia.

In reply to Mr. Johnson's query about the difference between the sow and gilt carcase, diagnosing these cases was difficult enough to men trained in animal anatomy and physiology, especially when the uterus and ovaries often were not available, and all one had was the carcase only, in the form of two sides. It had always amazed the speaker with what ease lay graders of the Ministry of Food pronounced opinions upon such cases, and their word was final. It carried greater weight than that of the veterinary surgeon. These men generally incised the mammary glands, and if a milky secretion was exuded, they pronounced the carcase that of a sow. In the speaker's opinion, that was not enough. The size of the teats, condition of the mammae, pelvic depth, and general appearance needed to be gone into, and if the uterus was available that should be examined also. Pigs were slaughtered for bacon in accordance with weights laid down by the Ministry of Food: about seven to ten score dead weight was usual; pigs weighing over eleven score dead were now classed as "overweights."

Arthritis in pigs had many causes, but there was one form of arthritis affecting the stifle joints in particular, and which might be found in pig herds kept under ideal conditions. This particular condition was not due to erysipelas, and, like the cases mentioned by the President, it responded to sodium salicylate treatment. Even ordinary aspirin tablets worked wonders in this condition. Americans claimed that an arthritis in pigs might be due to a virus, which was quite distinct from that of swine influenza. Endocarditis in pigs was not so common as all that; it appeared in less than 1 per cent. of cases, and all cases of pig endocarditis were not due to the erysipelas organism. Hydronephrosis seemed to start at the bladder and work back via the ureter to the kidney. In early cases the ureter and kidney pelvis was usually distended with urine. Calcium or magnesium deficiency following farrowing would sometimes lead to paralysis of the hindquarters in sows.

As far as good cross breeding for bacon production was concerned, he had indicated the pigs they used for commercial production, and he was asked if bias did not enter into his advocacy of the Welsh breed. That was a fair enough question and he would answer it candidly. There was no nationality bias in this business. He knew nothing about the virtues of the Welsh breed of pig until he first went to the Midlands. There he found to his surprise that Welsh pigs were being bred and crossed with Large Whites. On enquiring the reason for this choice of breeds, he was told that the Welsh gave a longer side of bacon than other breeds, but no reason was given for that statement, beyond the fact that the breeders concerned found that "it worked." Some years later he undertook the rib count, and found that there was a sound basis for this rule-of-thumb procedure in crossing Welsh with Large White pigs. He had found Welsh pigs giving as many as 17 pair of ribs. The Old White lop-eared pig, "your Cornish pig, Mr. President," was included in the Welsh breed, as they had the same origin. The thing to watch in crossing a black breed with a white pig was the presence of a melanotic pigmentation in the mammary tissue. This pigment was harmless enough, but was rather unsightly, and was objected to by the retail customer when it showed up in the bacon. It was a condition known in the trade as "seedy cut," and was said to be due to crossing a black boar with a white sow. If a white boar was used on a black sow the condition was not seen.

Mr. McFarlane had given it as his opinion that many diseases were due to lack of skill on the part of the pigman. That was true enough; a good pigman was worth his weight in gold. It also applied to cowmen and horsemen. There was a dearth of good animal-minded men on our farms: the tractor-driver was useless with animals.

Mr. McCrae had mentioned the large number of diseases met with in pigs in America. Much of that disease was due to overcrowding and dietetic deficiencies associated with mass production pig-rearing. We had something approaching the same state of affairs in this country in pre-war years. The drastic cutting down of our pig population during the war in consequence of lack of imported feeding-stuff helped to save us from necrotic enteritis, pig dysentery, and other conditions. Brucellosis in pigs in America was a serious condition, whereas in this country it was unknown, although our sows did get abortion, but not from *Br. suis*. Work done by Mr. Doyle at the Ministry of Agriculture's laboratory some years ago showed how very low was the incidence of Brucellosis in our pigs. Their comparative freedom from pig pneumonia over in this part of the country might be due to the fact that they did not go in for the Scandinavian type of pig house, where ventilation was always a problem.

Major Hicks did not like breeds abolished, and there was no reason why they should be, but if we were to compete in the world's markets we must produce a commercial article. Mr. Barr mentioned some suckers with scurfy skin, and it was possible that this condition might be due to a deficiency in the sow's milk. Generally the little pigs were born with enough iron in their system, plus what they might get from the sow's milk, to tide them over until after weaning, but if there was a deficiency, then it would tend to show in about three or four weeks after birth, and this skin condition was one of the symptoms. The number of ribs was important, so was the number of teats. They picked out for breeding stock those gilts with 12 to 14 teats, and this might have helped to "fix" the high rib count in their Welsh pigs. Blood was collected and used for blood meal; it was also collected for a blood sausage which in the Black Country they termed "black puddings."

He had tried to cover all their questions, and if he had missed any he apologised, as it was certainly not intentional. Once more he thanked them for their kind reception and hospitality.

USE OF DANGEROUS INSECTICIDES

Enquiry by Working Party

A conference was held recently by the Ministry of Agriculture to discuss measures for ensuring the safety of persons handling dangerous chemicals used in agriculture. Representatives of the National Farmers' Union, the T.U.C., the Agricultural Workers' Union, the Association of British Insecticides Manufacturers, the Association of Agricultural Contractors, and Government departments attended.

A statement issued after the conference said: "There was a full discussion of the safety problems occasioned by the necessary and increasing use in agriculture of insecticides and weed killers. It was agreed that all parties would intensify their efforts to bring home to those using dangerous substances the grave risks to which neglect of precautions may expose them.

"The conference welcomed a proposal by the Ministry that a working party should be set up to review the whole position in detail and to make recommendations which would be a useful basis for further action by all concerned, and would also be taken into account by the Government in their consideration of the recommendations for other legislation contained in the report of the Gowers Committee on health, welfare and safety on premises outside the scope of the Factories Act."

CLINICAL COMMUNICATION

THE ATTEMPTED TREATMENT OF THE LEUKOSIS COMPLEX BY INTRAPERITONEAL INJECTION OF POTASSIUM IODIDE

H. H. HOLMAN AND AUDREY J. WELLS,

AGRICULTURAL RESEARCH COUNCIL, FIELD STATION, COMPTON, BERKS.

INTRODUCTION

In 1940 Gray published the results of an experiment in which he had obtained favourable results in birds suffering from fowl paralysis by treating them on two consecutive days with an intraperitoneal injection of 5 ml. of 10 per cent. solution of potassium iodide. The writers have not seen any published experimental work confirming or disputing this work, but Gray (1944) records that Dr. Tj Bakker completely cured 55 per cent. of affected birds by using this treatment. One or two observations made by McKay (1947) appeared to support the favourable effect of such an injection and the following experiment was undertaken to provide further evidence.

EXPERIMENTAL BIRDS

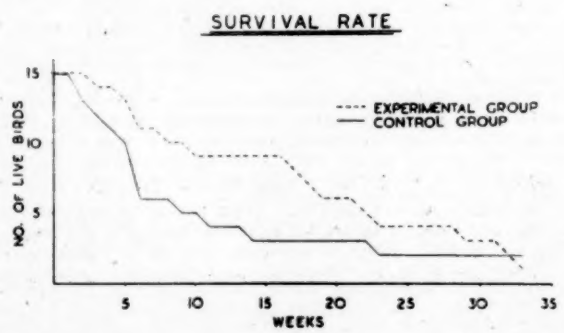
Thirty Rhode Island Red pullets, showing symptoms varying from dullness to the complete paralysis of a wing or leg, were obtained from a poultry farm in which, following occasional cases of fowl paralysis for some years, there had been a sudden increase in the number affected. The birds had been kept on free range and were obtained during the latter half of the month of August; after these pullets had been obtained the disease appeared to die down and no more affected birds were available. The birds were not in lay.

EXPERIMENT

Birds were sorted out into pairs, matching each pair as nearly as possible on clinical grounds, and one bird from each pair was chosen by the toss of a coin and put into the experimental group, while the other was put into the control group.

The 15 experimental birds each received the treatment recommended by Gray. Controls were not treated in any way. All were kept together in an inside pen, and bedding was renewed every other day. They were photographed on the first day of the experiment and each fortnight afterwards. Clinical symptoms and weight were noted each week.

When a death occurred the bird was weighed and a *post-mortem* examination was carried out.



RESULTS

The figure shows the number of birds alive at the end of each week. The experiment was carried out during a period of 33 weeks. At the end of 15 weeks nine treated and three untreated birds survived, but at the end of the experiment only one treated and two untreated birds out of the original 15 birds in each group remained alive. These three birds had all shown leg paralysis at the beginning of the experiment.

There was no significant difference in weights between birds in the treated and untreated group, and in each group weights decreased progressively during the last few weeks preceding death. In all fatal cases in the treated group symptoms diagnostic of fowl paralysis were observed before death, and in 11 cases the disease was confirmed at *post-mortem* examination. In one case, although there was a paralysis of both legs, death was thought due to an impacted crop. With one exception, all fatal cases in the control group showed symptoms of fowl paralysis before death, and in ten of these macroscopic lesions were found at *post-mortem* examination. The exception was a pullet, which was not definitely diagnosed as fowl paralysis, and in which no macroscopic lesion could be found on *post-mortem* examination. In one case in each group the macroscopic lesion consisted of tumour formation alone. No microscopic examinations were made.

DISCUSSION

The figure shows that more deaths occurred in the control group at an earlier stage of the experiment. This apparent association between the prolongation of life and the injection of potassium iodide was not due to any dramatic improvement in the health of the treated birds, and was not statistically significant. Partial recovery was observed in three treated birds and in one control bird, but these animals all died within the 33 weeks.

SUMMARY

1. Of 30 pullets affected with fowl paralysis, 15 were treated with an intraperitoneal injection of 5 ml. of 10 per cent. potassium iodide given on two consecutive days, and 15 were left as controls.

2. At the end of 15 weeks nine treated birds and three untreated birds remained alive.

3. At the end of 33 weeks only one treated bird and two untreated birds remained alive.

4. Under the conditions of the experiment, in which all the affected birds were kept together, no beneficial effect of practical importance was obtained by injecting potassium iodide in the manner and in the amounts described by Gray.

REFERENCES

GRAY, E. (1940.) *Vet. J.* **96.** 28.
———. (1944.) *Vet. Rec.* **56.** 348.
MCKAY, W. M. (1947.) Personal communication.

WEEKLY WISDOM

Some people seemed to think that our colonial enterprise was nearing the end. To him it seemed scarcely yet to have begun. On our success with the colonies depended the whole stability of the western world and the preservation of those liberal and humane values on which our civilisation and the future hopes of the colonial peop'es depended.—Mr. J. GRIFFITHS, Secretary of State for the Colonies, addressing members of the Corona Club.

NEW INSTRUMENTS AND APPLIANCES

A BATTERY HANDLE AND ADAPTOR FOR THE COLDLITE BOVINE VAGINASCOPE

C. A. V. BARKER, D.V.M., M.SC., D.V.SC.,

ONTARIO VETERINARY COLLEGE, GUELPH, CANADA

The Coldlite bovine vaginascope (manufactured by Messrs. Vann Bros., Weymouth Street, London, England) is an invaluable instrument for the examination of the bovine vagina and cervix. Steele-Bodger (1944) has mentioned the value of this instrument in the diagnosis of pathological conditions in the cervix and vagina, in detecting or confirming the presence of oestrus, and in connection with artificial insemination. The size of the Coldlite tube to a certain extent limits its usefulness in surgery of the vagina and cervix.

Since early 1948 a heifer size Coldlite vaginascope has been used by the author in field sterility work and for demonstrating to senior students pathological affections of the vagina and cervix. One of the undesirable features of the instrument was the necessity of a battery box and several feet of wire which frequently were found cumbersome. In addition there was not a suitable handle to hold the instrument in position for any lengthy examination. With these two points in mind an attempt was made to improve the vaginascope.

Through the efforts of Northcott Scientific Instrument Co., Guelph, Canada, an adaptor has been made which, with a modification of the battery handle and rheostat of the Holborn Surgical Instrument Co., Ltd., London, England, inspection lamp BV54, makes the Coldlite vaginascope a compact instrument. Fig. 1 shows the assembled instrument together with the detached portion of the inspection lamp. The battery handle may be used with either instrument. Fig. 2 shows the breakdown of the connecting portions of the original instrument, plus the adaptor and battery handle. The original lamp bulb in the reflector may still be used; however, the lamp bulb from the inspection lamp seems to be somewhat better. The two flashlight batteries in the handle provide power which may be easily controlled by the thumb on the handle. Fig. 3 shows the battery handle adaptor. This attachment was so designed that the original wire connector could still be used in emergency and the battery handle for the inspection lamp would still be useful as part of that instrument. A necessary change in the battery handle was removal of a portion of the flange on the head to permit introduction into the adaptor. Set screws on the adaptor turn into countersinkings on the lamp bulb reflector of the vaginascope and the battery handle head, thus preventing movement or separation of the adaptor during use. The handle-adaptor combination may be rotated to any desired position by releasing the set screw on the connection between the lamp bulb reflector and the vaginascope tubing.

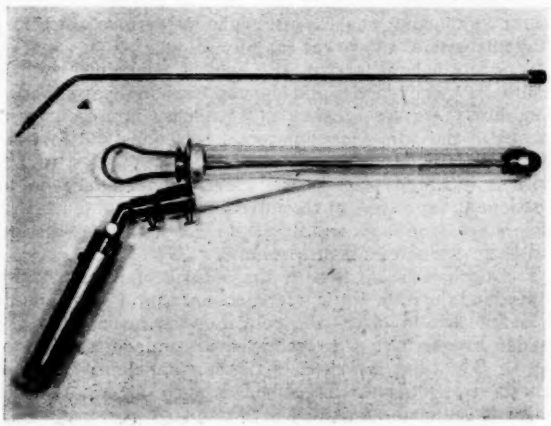


FIG. 1.—Coldlite vaginascope with battery handle and adaptor assembled. Inspection lamp attachment above.

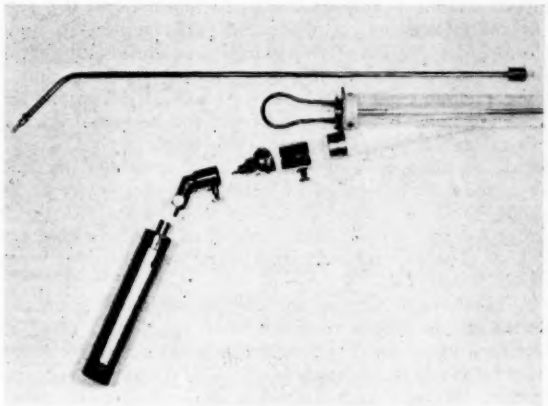


FIG. 2.—Breakdown of the handle attachments.

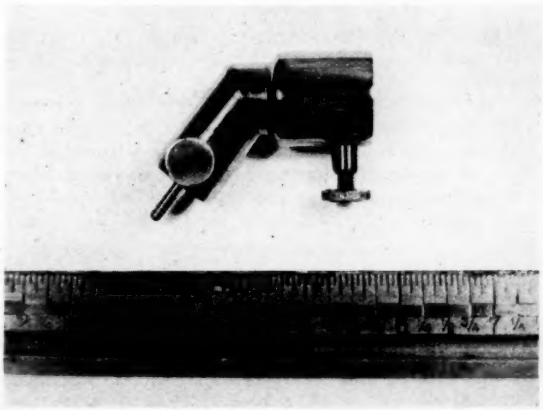


FIG. 3.—Adaptor. Scale shown is in inches.

In our opinion, this modification of the instrument has greatly increased its efficiency, making it very compact and not cumbersome. The instrument is easily inserted and quickly illuminates the area to be examined. This re-arrangement of the source of power and the addition of a handle will probably be found to cause more pleasure in use, at least that has been our experience.

Acknowledgments.—The construction of the adaptor and the modification of the battery handle was carried out by Mr. A. H. Northcott, of Northcott Scientific Instruments, Guelph, Canada. Thanks are due to him for the skilfulness of work done in this endeavour to improve a fine instrument.

REFERENCE

STEELE-BODGER, H. W. (1944.) *Vet. Rec.* **56.** 34.

ABSTRACTS

[Effect on Dogs of Feeding Flour Treated with Chlorine Dioxide and Nitrogen Trichloride. NAKAMURA, F. I., & MORRIS, M. L. (1949.) *Cereal Chem.* **26.** (6) 501–507.]

The basal ration employed in these experiments comprised untreated flour, 70; lactalbumin, 6; sodium caseinate, 6; U.S.P. No. 1 salt mixture, 4; dextrose, 5; lard, 8; sodium carboxymethyl cellulose, 1; and fish liver oil, 0·5 (2,000 units of vitamin A and 400 units of vitamin D per g.). Each 1 kg. of ration was supplemented with vitamin B_1 hydrochloride, 21 mg.; riboflavin, 16 mg.; nicotinic acid, 105 mg.; calcium pantothenate, 142 mg.; vitamin B_6 hydrochloride, 26 mg.; choline chloride, 1,310 mg., and a trace of vitamin K as "Menadione." For test purposes the untreated flour was replaced with flour containing varying levels of either chlorine dioxide or nitrogen trichloride. In all cases the dry ration was mixed with a measured amount of boiling water prior to feeding, while to ensure an adequate intake of vitamin A a further 0·5 ml. of fish oil was added to the daily food twice weekly. The experimental dogs were beagles or fox terriers of both sexes.

In 12 animals, varying initially in age from three to 20 months and in weight from 3·5 to 10 kg., flour treated with chlorine dioxide was incorporated into the ration for lengthy test periods (up to almost a year). There was no evidence of hysteria, although in two cases a level of 50 g. of chlorine dioxide per cwt. of flour was fed for 155 and 156 days respectively. Weight increase or maintenance was good, haematological data were normal, the tissues at *post-mortem* examination appeared to be unaffected, and electroencephalograms of three out of four dogs examined were normal. (Abnormalities, not described, were present in a fourth case but it was not concluded whether the diet was in any way responsible.)

In two puppies and two mature bitches (one a mongrel) the feeding of flour containing nitrogen trichloride rapidly induced symptoms of hysteria (ten to 21 days from the introduction of the treated flour). According to the severity of the symptoms, which appeared suddenly, the animals died or recovered following removal of the treated flour from the ration.

A. N. W.

* * * * *

[Observations on Histopathological Changes Associated with Starvation in Wisconsin Deer. RAUSCH, R. (1950,) *J. Wildlife Management*, **14.** 156–161. (Ten microphotographs.)]

Heavy winter losses in deer have long been known in the U.S.A. Public antagonism is such that artificial control of the deer population is rarely put into practice even when recognised as a necessary measure.

The present histopathological study was made on five starving deer collected in March, 1948, at the time of the year when the deer were suffering most heavily from food shortage. An earlier study of 20 deer dead from starvation did not indicate any evidence of verminous bronchial pneumonia, even though heavy infections of *Protostrongylus* were present. Numerous retrogressive changes were noted. The more common findings included: abundant haemosiderin in the spleen of fawns; marked decrease in the amount of fat in the bone marrow; rarity of haemopoietic cells in the bone marrow; reduction in the number and size of follicles in the spleen; deposition of acidophilic granular material in Bowman's space and in the proximal convoluted tubules of the kidneys; cellular hypertrophy of Bowman's capsule, and fatty degeneration of the heart. There was no evidence of pneumonia, verminous or otherwise.

The only commonly observed helminth, in addition to lung-worms, was *Ostertagia odocilei* Dikmans, 1931. Some of the animals were heavily infested with lice, *Cervicola virginianus* (Peters) 1930.

A. N. W.

* * * * *

[Fatal Poisoning with Udolac (Diaminodiphenylsulphone). DAVIES, R. (1950.) *Lancet*. **258.** 905.]

"Udolac" (I.C.I.) contains 33⅓ per cent. diaminodiphenyl sulphone. At one time considered too toxic for use in humans. Fatal symptoms are described when a child aged 22 months swallowed about 15 g. of "Udolac" (about 5 g. of the sulphone derivative). The patient was deeply cyanosed and barely conscious. In spite of stomach lavage, intravenous drip transfusion, oxygen, and other measures, the child died 54 hours after swallowing the "Udolac." The main toxic action seemed to be on the central nervous system, and also anoxia caused by the formation of an abnormal compound of haemoglobin (not identifiable as methaemoglobin).

F. A.

REVIEW

[Travaux D'Immunologie—Le Principe des Anatoxines et ses Applications. RAMON, G. (1950.) Pp. 230. Masson et Cie, 120, Boulevard Saint-Germain, Paris, 6.]

This is a book which undoubtedly will be welcomed by immunologists. The value of the contributions made by Professor Ramon in the field of practical immunology are now universally recognised, and his methods form the keystone of many officially sponsored schemes for the control of certain human and animal diseases. As Sir Percival Hartley recently remarked, "The outstanding contribution of Ramon in this field (flocculation and anatoxin) constitutes two advances with which his name must always be associated."

In the early chapters Ramon traces the various steps leading to the perfection of toxoids. He deals with the immunological principles underlying the use of formalised toxins and the probable mode of action of these products in controlling disease. In addition to an adequate exposition of laboratory procedures, the results of field trials are analysed, and where efficient control of a disease has been achieved, figures supporting the claims made by various workers in different parts of the world are submitted.

Naturally a large part of the book is concerned with the diphtheria prophylactics and the suppression of diphtheria in man, but there are sections of veterinary interest covering tetanus in the horse, staphylococcal infections and foot-and-mouth disease. It is a little puzzling to appreciate why the latter is included whereas the anaerobic infections are not mentioned: however, in the introduction it is stated that the book is one of a series and it is assumed that these organisms will be reviewed in a future volume.

The book is dominated by the outlook of Ramon and his pupils, and the bulk of the references are from French sources. It is felt that in places the contributions made by workers outside France have not received the prominence which they merit. The book is written with the competence which one expects from this distinguished French veterinarian, and whilst it cannot be regarded as a standard reference, it is of value in providing authoritative and up-to-date information on an important branch of immunology.

ROYAL COLLEGE OF VETERINARY SURGEONS

MEMBERSHIP EXAMINATIONS, JUNE/JULY, 1950

List of Successful Candidates

(*Continued from page* 412)

Edinburgh

FINAL EXAMINATION

*Baxter, J. T.
Butler, M. C. (S)
*Christie, Gordon
Clegg, F. G.
Cr.gnton, W. G.
*Davidson, J. B.
Dean, T. S.
Fraser, L. D.
*Gellatly, J. B. M.
Gibson, W. W. C.
Gittins, J. M. (S)
Coid, C. R.
Hardie, Henry
Hare, W. C. D. (S)
Harrison, K. S.
Henshaw, G. L.
Jennings, Miss A. H. (S)
Jones, E. J. (S)
*Lancaster, M. C.
*Logsdon, Miss S. E.
McCully, W. H.
McLaughlin, John
Magnus, A. S.
Magowan, J. W.
Mainzer, G. H.
*Martin, Harold
Murchie, Kenneth
Murchie, William (M)
Nadin, J. B. (M)
Parkes, W. D. C.
Peacock, J. M.
*Robson, G. L. (M)
Ross, J. P.
Scoggins, P. G.
Sharp, W. F.
*Shortridge, E. H.
Sojka, W. J.
Stewart, G. H. C.
Struthers, James
Sutherland, F. R.
Tarala, Jan
Thompson, P. K. (M)
Turton, J. D. (S)
Watson, D. A.
Wight, Graham
Willder, A. G.

* denotes 2nd Class Honours.
(M) denotes credit in Medicine.
(S) denotes credit in Surgery.

Glasgow

SECOND EXAMINATION

Bickerton, D. T.
Bradley, J. A. P.
Borland, H. A.
Cullen, R. G.
Ferguson, Angus
Gibb, J. A.
Johnston, William
Lyon, Miss B. E. (P)
McNair, R. C. (P)
Mackenzie, Alexander
Prydie, John (P)
Seawright, David (P)
Slater, Duthie
*Spy, G. M.
Taylor, J. L.
Thom, Alisdair
McCusker, H. B.
Orr, Miss Marion

* denotes 2nd Class Honours.
(P) denotes credit in Physiology.

THIRD EXAMINATION

Anderson, C. C.
Armour, James
Bent, C. L. (P) (A)
Bunyan, F. S. R.
Cameron, Miss M. C.
Coats, W. A.
Emmett, F. M. (A)
Gilchrist, Miss Mary
Gittleson, M. L.
Howat, A. N. H.
Howat, W. P.
Hutchison, Michael (A)
Jackson, W. G.
Kyle, David
Laing, D. F.
Lyons, A. R.
McLachlan, Iain (A)
Macleod, A. J.
Macpherson, Robert (A)
Mundell, D.
Nelson, John
Nicolson, T. B.
Parkyn, D. R. (P)
Renton, Miss J. P.
Sanderson, John
Steel, E. R.
Smith, J. H.
Thompson, J. D.
Townley, Miss Diana
Weipers, Mrs. Mary
Whiteford, Miss Joan

(P) denotes credit in Pharmacology.
(A) denotes credit in Anatomy.

FOURTH EXAMINATION

Anderson, Miss J. M.
Asher, R. A. (P)
Baird, N. D.
Baker, Norman
Barton, D. J.
Beck, Robert
Brewster, J. R.
Bougiel, H. L.
Broom, T. M.
Callow, Michael (Paras)
Doyle, Joseph
Ferguson, Murdo
Gibson, Robert
Goalen, H. McN.
Harkness, A. C.
Isbister, James
Lawson, R. B.
Loudon, A. J. B.
McCulloch, Buchanan
McDonald, A. W.
McNair, A. J.
Murray, G. D.
Parker, F. J.
Pronger, Mrs. F. M.
Robertson, W. W.
Schwartz, Cecil
Scott, W. N. (Paras)
*Smith, J. M.
Sothern, J. N.
Spiers, A. G.
Swift, A. G.
Thomson, Thomas
*Watkinson, D. E.
White, Miss C. H.
White, M. G.
Williamson, J. B.
Wilson, Miss J. S. S.

(P) denotes credit in Pathology.
(Paras) denotes credit in Parasitology.

FINAL EXAMINATION

Aitken, George
Bain, Miss N. L.
Barr, W. M.
Boyd, H. W.
Buchanan, John
Brown, William
Cosgrove, J. P.
Dickson, Ian
Ferguson, William
Garrett, J. A. L.
Graham, D. T.
Gibson, A. C.
Gracie, Archibald
Higgins, Archibald
*Hosie, K. F.
Lawson, John
Leslie, Miss M. G.
*McCrone, R. R.
McKay, T. M.
Mackie, A. M.
Maclennan, Donald
McNicol, O. D.
Macpherson, G. I.
Marshall , A. A.
Mount, Miss E. D.
Mowat, G. N.
O'Reilly, V. J. A.
Orr, R. R. S.
Payne, H. M.
Roger, S. A.
*Sachs, Max
Strachan, T. A.
Wilson, A. G.

* denotes 2nd Class Honours.

(To be concluded.)

IN PARLIAMENT

CARS FOR THE HOME MARKET: DISTRIBUTION CRITICISED

In the House of Commons on Wednesday of last week, on the motion for the adjournment,

Mr. GEORGE THOMAS raised the question of the distribution of new cars. Unpleasant practices, he claimed, were taking place. In a period of scarcity everyone appreciated they must take their place in the queue, but when people had the idea that there were queue dodgers who were able to get three or four new cars while they waited for one the sense of social injustice created damaged the system of distribution. The trade should display their waiting lists for all to see. The present shabby system of supply was placing a premium on honesty.

Mr. YATES said that prospective buyers would feel happier if the covenant period were raised to two or even three years. It was almost a spiv car dealers' paradise at the moment, and it was their duty to see such a serious racket ended.

Sir PETER BENNETT said he would pity the Ministry of Supply if they tried to allocate cars. The industry was sending 75 per cent. of its output overseas.

Mr. J. FREEMAN, Parliamentary Secretary, Ministry of Supply, said that the Ministry of Supply had no power of control over the distribution of cars in the home market at present. The trade had been most co-operative in acting in accordance with the suggestions the Ministry had made. Accepting that the ratio of home and export cars should not be changed, he said that the shortage of sheet steel was another limiting factor. At present we were obtaining every ton of sheet steel we could find anywhere in the world, and not until the middle of next year, when new mills in South Wales came into production, would we have an easier position. It would be reasonable to express a cautious hope when sheet steel was sufficiently plentiful for the motor car industry to obtain full production.

The complexity of achieving individual control either by statute or the co-operation of the industry was so great as to rule it out of consideration as a practical proposition.

At present a limited priority was being given by the trade to meet the needs of doctors and midwives, and the trade was against extending that priority to other classes. If they opened the door any wider they would quickly get a state of affairs where the whole of the allocation of cars on the home market was drawn into the priority class and the damage done and hardship caused might well be greater than at present. The task of establishing priorities all over the country between individuals was impossible, and he could not imagine what the cost would be.

There was no way of distribution to the home market with less difficulty, other than leaving the discretion on individual distribution in the hands of the local dealer. On the information they had got he was satisfied that the abuses of the covenant were not as great as had been suggested. At the beginning of the year the

Ministry had suggested to the British Motor Trade Association, in view of the relatively small number of cars allocated this year to the home market, that there might be grounds for extending the period of the covenant for two years. The response of the association was to carry out a survey which showed that within 15 months from the purchase of a new car not more than 2 per cent. were being turned over. It was obvious that this was not the national scandal in the sense alleged. The Ministry had asked the association to keep the matter under review, and they were extending their survey to a period of two years after purchase, and they would see what results were obtained. It would be advisable, he thought, for the trade to accept the suggestion to extend the period of the covenant. The difference in actual numbers would not be great but it would go some way to giving the public greater confidence in the effectiveness of the distribution scheme.

. . . . .

Questions

Fowl Pest

Mr. Hurd (July 13th) asked the Minister of Agriculture if, in order to safeguard the British poultry industry from further outbreaks of fowl pest, he will prohibit the importation of all poultry, except cooked carcases, from countries where this disease has become endemic.

Mr. Nugent (July 13th) asked the Minister of Agriculture if he is aware that over the past two and a half years over 400,000 poultry have either died or been slaughtered as a result of outbreaks of fowl pest; and what steps he is taking to bring this dangerous infection to an end.

Mr. T. Williams: About 165,000 birds have been slaughtered on account of fowl pest during the last 2½ years. I have no precise information about the number that have died, but my Department estimates the total losses during that period, including birds slaughtered, at about 200,000. Under the Poultry Carcases (Importation) Order, 1950, imports of poultry are permitted only from four countries where fowl pest is endemic, and these birds must be eviscerated, marked with the country of origin, and sold only within five areas in England and Wales which are mainly industrial or residential. In addition, veterinary officers of my Department have visited the two countries chiefly concerned and concluded arrangements which should materially reduce the risk of infected carcases being sent to this country. I am advised by my right hon. Friend the Minister of Food that supplies of poultry would not be adequate, particularly for the Christmas trade, if imports from all countries where fowl pest is endemic were entirely prohibited.

Mr. Hurd: Is it not really time that the Minister took serious and effective action? Otherwise, we shall have fowl pest endemic in this country, too. Will he not redraft his regulations? Does he not realise that what he is now doing is concentrating the plague spots around the towns? Inevitably, the disease will spread to the rural areas.

Mr. Williams: The information at my disposal does not justify that observation, the number of outbreaks in 1949 was 582, and so far this year there have been only 94, thanks to various Orders which we have introduced limiting the movement of birds.

Major Sir Thomas Dugdale: Is the Minister aware that only yesterday there were four new outbreaks in Lancashire alone? Will he reconsider the whole position, especially in regard to the four countries which are now exporting these birds here? If we get a further outbreak here we shall be much shorter of poultry than we shall be if we stop this importation right away.

Mr. Williams: I believe that one outbreak in Lancashire was due to the use of unboiled swill, and I think that the person responsible for it may be in trouble.

Mr. Nugent: Is the Minister aware that the outbreak of which he is speaking was due to a carcase imported from Poland?

Mr. Williams: Probably, and not boiled.

Mr. Baldwin: Does not the last answer mean that whatever steps can be taken or are being taken to deal with this poultry which is brought in from these countries which are ravaged with this disease cannot be effective merely by confining it to any particular area? It must be spread by birds or swill, or whatever it may be.

Mr. Williams: Yes, but as I have said, if the remains of the poultry were boiled before it was allowed to be used these outbreaks would cease.

Colonel Gomme-Duncan: Is the Minister aware that all these "ifs" do not get to the root of the matter, and that the only possible remedy in this dangerous situation is absolutely to forbid the importation of these birds from infected countries? In the same way that we have stamped out rabies we can stamp out this disease very quickly.

Captain Duncan (July 13th) asked the Minister of Agriculture what steps he is taking to prevent a recurrence of fowl pest in Scotland as a result of the new order permitting imports of certain poultry.

Mr. Snadden (July 13th) asked the Minister of Agriculture what steps he is taking to prevent the importation of fowl pest into Scotland in view of the serious losses incurred from this disease during the past two and a half years.

Mr. T. Williams: The recent series of outbreaks of fowl pest in Scotland appears to have had no connection with imported poultry, and there is some evidence that sea-birds were responsible for spreading the infection. For some time now poultry imported from certain countries in which fowl pest is endemic has not been distributed in Scotland, and the effect of the recent Order is to strengthen and give statutory force to this arrangement. I cannot, of course, prevent the accidental introduction of infection by agencies outside my control, but this arrangement, together with the regulations already in force for controlling the movement of live poultry, should provide adequate safeguards against preventable risks.

NOTES AND NEWS

Diary of Events

July 28th.—Summer Meeting of the Yorkshire Division, N.V.M.A., at Burley-in-Wharfedale (Cattle Breeding Station, Colston House), 2.30 p.m.

July 28th.—Meeting of the Sussex Division, N.V.M.A., at Brighton (Old Ship Hotel), 2.30 p.m.

Aug. 2nd.—Summer Meeting of the Eastern Counties Division, N.V.M.A., at Cambridge (Department of Animal Pathology), 11.30 a.m.

Aug. 3rd.—Special Meeting of Technical Development Committee, N.V.M.A. to discuss report on Artificial Insemination, at 36, Gordon Square, London, W.C.1, 11 a.m.

Sept. 3rd-8th.—Sixty-eighth Annual Meeting and Congress of the National Veterinary Medical Association, at Cardiff.

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Scheme for the Control of Certain Diseases of Dairy Cattle

Decision to Terminate as from October 1st Accepted by N.V.M.A.

Under circumstances which will be disclosed fully in the report of the proceedings to be published in a forthcoming supplement of *The Veterinary Record*, the Council of the Association, at its meeting on Friday of last week, approved the recommendation of the Veterinary State Medicine Committee that acceptance be made of the decision of the National Farmers' Union and the Ministry of Agriculture that the existing Scheme for the Control of Certain Diseases of Dairy Cattle be terminated as from October 1st, 1950. The Ministry, however, has undertaken to honour its obligations under all contracts then existing, until their expiration.

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PERSONAL

Births.—Cross.—On July 16th, 1950, at Cambridge, to Audrey (*née* Crow), wife of B. A. Cross, B.A., B.SC., M.R.C.V.S., a daughter.

Hoffe.—On July 7th, 1950, at the Barrats Nursing Home, to Ann (*née* Thomas), wife of Ivan A. Hoffe, a son—Christopher.

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Marriages.—Low—Lambert.—On July 8th, 1950, at Dinnington, Nr. Sheffield, Joseph J. Low, M.R.C.V.S., of Gt. Yarmouth, Norfolk, to Dorothy Elizabeth Lambert, S.R.N., S.C.M.

Shorter—Wright.—On July 1st, 1950, at Holy Trinity Church, Bramley, Surrey, David Richard Shorter, M.R.C.V.S., only son of the late Mr. G. D. Shorter and Mrs. Shorter, of Hove, Sussex, to Ann, youngest daughter of the late Mr. G. H. Wright and Mrs. Wright, of Merrow, Guildford.

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Conferment of Degrees

At a congregation for the deferment of degrees held by the University of Liverpool on July 8th, the degree of Ph.D. was conferred upon Mr. J. R. Holmes, B.V.SC., M.R.C.V.S. The title of the thesis was "Studies into Bovine Ketosis." The work was carried out at the Veterinary Field Station of the University whilst Mr.

Holmes was the holder of the A. D. Allen Memorial Scholarship of the Animal Health Trust.

Professor Blakemore's Honorary Degree

As briefly announced in our last issue, Professor Fred Blakemore, Professor of Veterinary Medicine at Bristol University, and former superintending veterinary investigation officer for England and Wales, was invested with the honorary degree of Doctor of Veterinary Science by Liverpool University Council at the conferment day ceremony on Saturday, July 8th.

The Public Orator, Professor D. R. Seaborne Davies, introduced Professor Blakemore to the Vice-Chancellor in the following terms: "The great sign that divides us human beings from all that breathes is our discontent. Man is the only animal that is struck with the difference between what things are and what things ought to be.

"Frederick Blakemore, Professor of Veterinary Medicine in the University of Bristol, has wedded an amplitude of comprehension to great minuteness of observation in his successful efforts to bring the things which are to what they ought to be in the realm of creatures which are content merely because they are too dumb to be otherwise.

"Very appropriately derived from Cheshire stock, he wisely chose this University to give him the foundations of his science and a nearby University to give them a superficial polish. He then moved to the University of Cambridge to teach its students the rudiments of hygiene.

"His abiding interest in dumb creatures led him into the Civil Service. That environment made so manifest the superiority of his intellect that after a period of delight in the fauna of Glamorgan and of attention to the inferior denizens of East Anglia he became the Superintending Veterinary Officer for England and Wales.

"It was an ancient tendency to make zoology a mere handmaiden of ethics and to reduce it to a series of heavenly meditations upon earthly creatures. Exhibiting the more modern attitude which prevails, at least in this sector of science, Fred Blakemore stands renowned for his aptitude for fundamental enquiry and his conspicuous ability to apply it to practice. His researches range from the fowl which lays eggs which in these days are indubitably golden to the cow which now milks the taxpayer. He is reputed to know why horses sleep standing and students stand sleeping.

"To his professorship he brings the inestimable qualities of innate sympathy for the ideals of young people and of rare capacity to harness their energies and enthusiasms. The scrupulosity of his scientific work is noted and admired even by his fellow-scientists. He bears a reputation for fearlessness in the exposition and defence of his views which surprises those who have not previously witnessed circumstances which call for the abandonment of his habitual modesty.

"Our pride in our own long-established School of Veterinary Science is enhanced by the call which has come to one of its sons to lead the newest of the University Veterinary Departments. We know that our own repute, as well as the success of this young venture in the old home of Merchant Adventurers, are safe in his capable hands."

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Cambridge Professorship for Major Leslie Pugh

Major Leslie Penrhys Pugh, B.SC. (LOND.), F.R.C.V.S., of Sevenoaks, has been elected into the Professorship of Veterinary Clinical Studies in the University of Cambridge as from January 1st, 1951.

The profession will congratulate alike Major Pugh on his professorial charge of veterinary clinical studies in the University, and that institution in obtaining the services of so eminent a practitioner who, as our columns often have borne witness, has lost no opportunity of prosecuting practical research into, more particularly, bovine and canine disease problems.

Born in 1895, Leslie Pugh, who was educated at Tonbridge, graduated from the Royal Veterinary College in July, 1917, and took the B.Sc. of London University in the same year, at the conclusion of which he, having been gazetted Lieutenant, went to France on military service. Becoming D.A.D.V.S. 44th (H.C.) Division, he eventually retired with the substantive rank of Major. On his return in 1919, Major Pugh entered the family practice at Sevenoaks, steadily enhancing the successful tenure of an undertaking which now embraces in partnership Mr. John W. Bruford, the present President of the N.V.M.A.

Major Pugh's service to the profession includes ten years as Examiner for the Fellowship Diploma of the Royal College of Veterinary Surgeons (he himself obtained the Fellowship in 1923, for a thesis on Bovine Sterility). For two years he was President of the South-Eastern Division of the N.V.M.A., while he was the first Honorary Secretary of the Comparative Section of the Royal Society of Medicine.

PROTECTION OF LABORATORY ANIMALS

"A first draft for a model 'Act for the Protection of Laboratory Animals' has been circulated by the Universities' Federation for Animal Welfare for the purpose of eliciting constructive criticism and enabling a revised draft to be eventually offered to foreign enquirers who may wish to profit by British experience in the regulation of experiments on animals," states *Nature* in its issue of July 8th,, and continues: "The proposals are based on British practice; but they differ from it in important respects. Thus, the Act would apply not only to animals under experiment but also to 'biomedical manufactures,' that is, the management of sera, vaccines and the like *in vivo*, and to the management and supply of laboratory animals. Unpopular species would be protected equally with popular species. The Act would permit the use of stray animals subject to safeguards, and also operations, carried out under full anaesthesia without recovery, for the purpose of acquiring manipulative skill. On the other hand, it would not permit any experiment which involves substantial suffering of more than brief duration, or extreme suffering. The obvious difficulties of definition which these expressions involve are left to be solved by discretion, analogy and precedent, with the guidance of examples given in a schedule which is obviously intended only as a basis for discussion. In accordance with British practice as disclosed in the annual reports of the Home Office, no operation (defined as 'the infliction of a trauma more serious than that caused by skilful subcutaneous venesection or the insertion of a sharp hypodermic needle') would be permitted without anaesthesia. A clause of the draft Act is devoted to an elaboration of the meaning of anaesthesia.

"The day-to-day administration of the Act would be directed by a scientific, veterinary and humanitarian board of control having inspectors under it. Licences would be granted by the board after enquiry into the applicants' scientific ability and general character, and would be graded in accordance with the severity of the procedures authorised; a licence would not cover operations with or without recovery, electric stimulation, or demonstrations to students, unless a specific clause to that effect were added. There would be a subordinate grade of licences for laboratory technicians, who would be permitted to carry out prescribed procedures under the experimenters to whom they were attached. Discipline would be exercised on behalf of the Minister of the Interior by the board of control, and there would be a right of appeal to a tribunal. The draft, which runs to ten pages of typed foolscap, can be obtained from the Universities' Federation for Animal Welfare, 284, Regent's Park Road, Finchley, London, N.3, which would welcome constructive criticism."

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INTERNATIONAL HORSE SHOW

The International Horse Show will be held this year at the White City from July 22nd to 28th. At a luncheon at the Savoy Hotel, the Duke of Beaufort said that the King and Queen would arrive for the opening of the show in carriages drawn by horses, and that other members of the Royal Family would also visit the show. Besides competitors from Great Britain, there would be competitors from France, Ireland, Spain, Sweden and Italy. He had been particularly impressed by the quality of British ponies entered at shows in this country and, by the fine riding of children who competed in the pony classes, and no other country could produce hunters like ours. He hoped that this year there would be an increased attendance at the show, making it, as formerly at Olympia, one of the great events of the season.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SWINE FEVER

Argyllshire.—Lower Soroba Farm, Oban, Argyll (July 12th).

Dorset.—Potteries, Poole Road, Branksome, Bournemouth (July 13th).

Hants.—Crown Farm, Ringwood, Hants (carcase at Bailey's Slaughterhouse, Fleet Bridge, Poole, Dorset) (July 11th).

Surrey.—3, The Dell, Folly Lane, Upper Hale, Farnham (carcase at Ministry of Food Slaughterhouse, Peabody Road, Farnborough, Hants) (July 13th).

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The Earl of Tankerville, of Chillingham Castle, Northumberland, reported to the annual meeting of the Chillingham White Cattle Society an addition of two heifer calves to this famous herd of wild cattle, which now numbers 15 animals. The membership of the Society totals 251.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

THE DEHORNING OF ADULT CATTLE

Sir,—A recent report in your journal of a successful case brought by the Society against a farmer who had dehorned his animals, may, in view of the reporting being necessarily abbreviated, lead to some misunderstanding of the views of the Society towards this operative procedure.

The Society has, of course, welcomed the advent of local anaesthesia for the performance of this operation, and when it is asked what is the best method of removing horns, it has, on expert advice, been inclined to favour the removal of horns by means of rubber bands. It is here that some misunderstanding may arise.

Results seem to leave no doubt that whether the removal is by saw or shears it is followed by surgical shock and some degree of pain over a period. The drop in the milk records over a period of some days is additional evidence to the effect.

Likewise there seems little doubt that the application of a rubber ring of fixed diameter to horns of differing diameters cannot ensure the removal of the horn by strangulation in an appreciable proportion of cases. This objection does not appear to hold where the horn is slowly amputated by a clove hitch knot, tied in quarter-inch diameter elastic such as is manufactured for driving model aeroplanes.

We have recently been very greatly indebted to Mr. E. Wilkinson, M.R.C.V.S., of Derby, who went to very great pains to demonstrate his particular technique with this elastic band. It is a method of dehorning which our Chief Veterinary Officer has no hesitation in recommending, after consideration of all the relevant details from the time the local anaesthetic is administered to the time the horns drop off.

It is, therefore, the hope of the Society that this method used by Mr. Wilkinson will be increasingly utilised by members of the profession.

Yours faithfully,
A. W. Moss,
Chief Secretary.

Royal Society for the Prevention of Cruelty to Animals,
105, Jermyn Street,
London, S.W.1.
July 7th, 1950.

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ATTESTATION: IS IT A GOOD POLICY?

Sir,—In the July 1st issue of *The Veterinary Record* Mr. L. Pitcher gives figures dealing with the annual incidence of the "tuberculosis position" in man in Denmark. It is noticed that these figures deal only with "tuberculosis pulmonum." What about the other forms of tuberculosis?

The data provided by Mr. Pitcher do not prove that there has been a *significant increase* in pulmonary tuberculosis in man since the percentage of the reaction-free herds in Denmark has increased from 26·5 in 1937 to 93·9 in 1946. His figures prove that during the years 1929 to 1932 the incidence of pulmonary tuberculosis in man was high in spite of the then high herd incidence, presumably not below 76·5 per cent. Why did not Mr. Pitcher's hypothetical immunisation function satisfactorily at that time?

The data which Mr. Pitcher produced would have been of much greater significance had he recorded, also, the percentages of infection in the different age groups and in the different social strata of the human population and had he stated the amounts of milk and milk products consumed per head in the various groups.

How does Mr. Pitcher explain the relative low incidence of tuberculosis amongst Europeans in some parts of Africa where tuberculosis is practically unknown in dairy stock and where the Europeans are exposed daily to infection from badly affected non-Europeans?

The epidemiology of tuberculosis in man and in his stock has received much attention in the past, but how the micro-organism gains access to the tissues has not yet been explained satisfactorily. Close contact between the healthy and the sick does not directly infect the healthy. It merely facilitates the implantation of the "virus," present in great concentration, in those that offer the "virus" the necessary portals for entering the tissues. It cannot be accepted that the "virus" can penetrate healthy intact tissues of the lungs or any part of the alimentary tract. It is significant to note that tuberculosis seems to spread rapidly when introduced into an area where man and animals are heavily parasitised by helminths which damage the tissues of the lungs and of the alimentary tract during the invasion of the hosts. The parasites (viruses, bacteria, protozoa, fungi, helminths and blood-sucking insects, etc.) of man and beast are much more co-operative in their onslaughts on their hosts than is as yet fully appreciated by those who deal with the prevention of disease.

The maladies to which the flesh of man and beast is susceptible can be controlled and eradicated only by a combined and sustained assault, simultaneously conducted, against all parasites and malnutrition. Is it not the long overlooked and neglected minor and non-killing diseases of man and his stock which expose them to the ravages of the feared and dreaded maladies? The discovery of cures and prophylactic vaccines and sera has saved many lives, but it has diverted attention most effectively from the study of the epidemiology of the much feared diseases. The phrase, "Win the war and lose the peace," born during the last world war, explains precisely what happens when a cure for a malady is discovered. The result is that the root of the evil remains untouched and the "cold war" continues to the annoyance and discomfort of all.

Attestation is a good policy and it will become a better policy and ultimately the best policy when all the diseases of man and beast receive the same attention and are suppressed simultaneously. It seems a most unsound and unscientific policy to attempt the creation of good health by trying to eliminate the various maladies one by one. A better organisation of science in the fight against diseases must be founded. Lack of collaboration amongst the fighters against disease and want perpetuates parasitism.

The much-dreaded tuberculosis continues to prosper and slay because the tuberculous "cat" with its parasites is allowed in the manger and in the animal food store to chase the "rat." The biological control of tuberculosis in man by non-interference with tuberculosis in dairy herds as Mr. L. Pitcher would seem to suggest is as undesirable as the biological control of the rat by the tuberculous cat.

Although I cannot but condemn Mr. Pitcher's hypothesis that the extermination of tuberculosis in dairy herds will result in an increase of the disease in man, I wish to congratulate him on his successful resurrection of an ancient controversy. The correspondence to date proves that our knowledge of the epidemiology of tuberculosis in man and animals needs further attention.

Yours faithfully,
P. L. le Roux.

Department of Parasitology,
London School of Hygiene and Tropical Medicine,
Keppel Street (Gower Street),
London, W.C.1.
July 7th, 1950.

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"INDEX VETERINARIUS"

Sir,—I should be grateful for the use of your correspondence columns in order to enquire if any members have copies of the *Index Veterinarius* which they would be willing to sell.

Our set at this Laboratory is incomplete as the following parts are missing and I am informed that they are now out of print: Vol. 1 complete, *i.e.*, Nos. 1, 2, 3 and 4; Vol. 2, Nos. 1, 2 and 3; Vol. 11 complete; Vol.12 complete.

I am very anxious to obtain these missing parts and would be most grateful to any person or institution who or which would be willing to sell them.

Yours faithfully,
Jack K. H. Wilde,
Chief Veterinary Research Officer.

Veterinary Research Laboratory,
Mpwapwa, Tanganyika Territory.
July 5th, 1950.

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FREE CLINICS

Sir,—With reference to my letter in the recent Supplement to *The Veterinary Record* (July 8th, 1950) I would be very pleased if those members who have written to me personally on this matter would accept this notice of my acknowledgment and thanks.

I would, however, like to emphasise that public opinion can only make itself felt if each individual unit registers an opinion at a central H.Q.

I would therefore most earnestly request that all interested will write or rewrite their letters to the Editor of *The Veterinary Record*.

Yours faithfully,
W. J. Tarver.

39, Beech Grove,
Ashton-on-Ribble,
Preston, Lancs.